

REMARKS

This application has been reviewed in light of the Office Action dated May 3, 2006. Claims 1-25 are presented for examination. Claims 1-25 have been amended to define more clearly what Applicants regard as their invention. Claims 1, 9, and 21 are in independent form. Favorable reconsideration is requested.

As requested by the Examiner, a certified copy of the foreign priority document will be submitted separately.

Headings have been added to the specification in response to the objection thereto.

The claims have been amended in response to the objections to the claims to improve their form vis-à-vis typical U.S. practice.

Claims 1-25 were rejected under 35 U.S.C. § 101 as being directed to non-statutory subject matter. These rejections are respectfully traversed, because it is believed that one of ordinary skill in the art would readily understand that the claims are directed to methods and apparatuses that achieve useful, concrete, and tangible results. Nevertheless, the claims have been amended to make the useful and tangible nature of the claimed subject matter even more apparent, taking into account the points raised by the Examiner in paragraph 6 of the Office Action. Accordingly, it is believed that this grounds of rejection has been obviated and withdrawal of these rejections is therefore respectfully requested.

Claims 1-25 were rejected under 35 U.S.C. § 102(e) over U.S. Patent No. 6,389,379 ("Lin").

Generally speaking, the invention provides a hardware emulator having two reconfigurable hardware parts to implement the hardware model. A first reconfigurable hardware part is used to implement the synthesizable portion of the design under test, and a second reconfigurable hardware part, referred to as a Reconfigurable Test Bench (RTB), is used to implement the synthesizable portion of the test bench. Among the advantages provided by the invention is that there is no need to re-compile the design under test when changing the mode of operation, because in such a case, only the RTB needs to be reconfigured.

Claim 1 recites a method of emulating a design under test associated with a test environment. The method includes generating, in a first phase, a first file for configuring the test environment, and generating, in a second phase, a second file for configuring at least a part of the design under test. The first configuration file is delivered to a first reconfigurable hardware part forming a reconfigurable test bench, so as to configure the test bench. The second configuration file is delivered to a second reconfigurable hardware part, so as to configure an emulator of the design under test. The first and second reconfigurable hardware parts are distinct and mutually connected.

By contrast, Lin relates to a method in which a user's design is partitioned to generate a software model and a hardware model. The hardware model, including the synthesizable portions of the design under test and the test bench, is synthesized and implemented on a single reconfigurable hardware device, based on reconfigurable FPGA chips (Fig. 1, ref. no. 20). This mode of operation is referred to as "HDL co-simulation" or

“simulation via hardware acceleration”. Lin also discloses a way to run the hardware model in a second mode of operation, called in-circuit emulation (ICE), in which the hardware model interacts directly with an external hardware target system.

Nothing has been found or pointed out in Lin that would teach or suggest a first configuration file being delivered to a first reconfigurable hardware part forming a reconfigurable test bench, so as to configure the test bench, and a second configuration file being delivered to a second reconfigurable hardware part, so as to configure an emulator of the design under test, the first and second reconfigurable hardware parts being distinct and mutually connected. Rather, Lin, as discussed above, uses a single reconfigurable hardware model (see Fig. 1, ref. no. 20) to implement both the design under test and the test bench.

Accordingly, Claim 1 is believed to be patentable over Lin.


Independent Claims 9 and 21 recite features similar to those discussed above with respect to Claim 1 and therefore are also believed to be patentable over Lin for the reasons discussed above.

The other claims in this application are each dependent from one or another of the independent claims discussed above and are therefore believed patentable for the same reasons. Since each dependent claim is also deemed to define an additional aspect of the invention, however, the individual reconsideration of the patentability of each on its own merits is respectfully requested.

In view of the foregoing amendments and remarks, Applicants respectfully request favorable reconsideration and early passage to issue of the present application.

Applicants' undersigned attorney may be reached in our New York office by telephone at (212) 218-2100. All correspondence should continue to be directed to our below listed address.

Respectfully submitted,

A handwritten signature in cursive script, appearing to read "Carl B. Wischhusen", written in dark ink over a horizontal line.

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